AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [3] with the following amended paragraph:

[3] Usually, an initial cell searching process of the TD-SCDMA communication system is divided into four steps. The first step is to receive base station information of a cell to which a terminal currently belongs ~~currently~~. The second step is to identify a scrambling code and a basic midamble code being used. The third step is to check a position of a broadcast control channel (BCCH). The fourth step is to access information on a common channel including information, that is, system information, transferred through the BCCH.

Please replace paragraph [7] with the following amended paragraph:

[7] In addition, in the case of searching the initial synchronization by using the one FIR filter, though the hardware construction may be simple, 32 times of correlation should be performed for the initial synchronization, causing a problem that it takes a long time for searching. Meanwhile, the fact that the filter tap is long when performing the correlation for the initial synchronization searching in the terminal means the terminal should repeatedly perform numerous multiplications and additions.

Please replace paragraph [11] with the following amended paragraph:

[11] ~~an~~ An object of the embodiments of the present invention is to provide a mobile communication system capable of searching an initial synchronization simply and quickly.

Please replace paragraph [20] with the following amended paragraph:

[20] To achieve at least these advantages in whole or in parts, there is further provided an initial synchronization apparatus of a mobile communication system including: first and

second accumulation ~~buffer~~ buffers for respectively accumulating signals I and Q; first and second absolute value calculators for obtaining an absolute value from outputs of the first and second accumulation buffers; an adder for adding outputs of the first and second absolute value ~~calculator~~ calculators; an estimator for estimating a candidate region for initial synchronization from the added absolute value; and a synchronization searching unit for obtaining an initial synchronization of a terminal by correlating the estimated candidate region and a synchronous code. Preferably, the accumulation buffer is a circulation buffer.

Please replace paragraph [33] with the following amended paragraph:

[33] In contrast, the present invention proposes a method in which correlation is performed not on the entire input signals but on a specific region of an input signal, so that the initial synchronization of the TD-SCDMA can ~~be~~ proceed simply and quickly. For this purpose, in the present invention, buffers are provided to respectively store input signals I and Q of one sub frame, in which input signals are accumulated for several frames. In this case, only addition is necessary for one sample. When an absolute value of the accumulation values of the input signals stored in the buffers is obtained in a lapse of a certain time, average powers of the input signals are shown to be periodic. Thus, assuming that the buffers are the circulation buffers, a signal region having a significant average power exceeding a certain length (e.g., about 60 chips) is searched and selected as a candidate region, and a correlation is performed on the selected candidate region. Those skilled in the art will appreciate the signal region having a significant power can include a relatively high power region when compared to the other regions, or exceeding a threshold or a threshold differential and the like.

Please replace paragraph [37] with the following amended paragraph:

[37] Input signals I and Q transmitted by a base station ~~has~~ are accumulated in each accumulation buffer 10 and 20 (step S10). Because the accumulation buffers 10 and 20 are circulation buffers, when input signals I and Q are stored to the last storage region, input signals I and Q are stored by being added to the previously stored values from the first storage region. This can be expressed by the following equation (1):

$$\sum I(t\%L) = \sum Q(t\%L) \quad \text{---------- (1)}$$

wherein 't' is an input sequence number, 'L', the size of the accumulation buffer, is 6400 chips or 6400 chips x m (in the case of oversampling), % indicates a remaining operator. In this case 't' is an integer from 1 to n, and t%L has a value of 0~6400. That is, $\sum I(t\%L)$ can be expressed by:

$I(1\%6400) + I(2\%6400) + I(3\%6400) + \ldots + I(n\%6400)$.

Please replace paragraph [39] with the following amended paragraph:

[39] The absolute value calculators 30 and 40 receive the accumulation values of the accumulation buffers 10 and 20 and calculate absolute values (step S11), and the adder 50 adds absolute values outputted from the absolute value calculators 30 and 40 (step S12). The addition result can be expressed by ~~below~~ the following equation (2):

$$\left|\sum I(t\%L)\right| + \left|\sum O(t\%L)\right| \quad \text{---------- (2)}$$